
California Underground Facilities Safe Excavation Board

April 14 -15, 2025

Agenda Item No. 23 (Information Item) – Staff Report

Coordinated Statewide Education and Outreach Workshops Update

PRESENTER

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SUMMARY

The Board's Education and Outreach Committee (E&O Committee) is conducting a series of workshops with stakeholders to collaboratively identify safety concerns and inform the development and implementation of training. Two workshops have been completed, and two additional workshops are planned.

STRATEGIC PLAN

2020 Strategic Plan Objective: Improve Compliance by Reaching Parties in Effective Ways

Strategic Activity: Establish a Framework for Coordinated State Education and Outreach

BACKGROUND

Government Code section 4216.12(b)(1) ¹ requires the Board to coordinate education and outreach activities that encourage safe excavation practices.

At the Board's 2023 Education and Outreach meeting², the Board determined a need for coordinated education and outreach. As part of the 2024 Workplan³, staff conducted interviews with industry stakeholders to gain insight into their education and outreach programs and to analyze evaluation techniques and effectiveness. At the Board's 2024 Education and Outreach meeting, Staff presented the research findings and recommended that staff conduct a series of workshops with stakeholders to better understand training issues from different perspectives in the call-before-you-dig process⁴.

Staff identified three goals for the workshops. The first is to engage stakeholders and understand training issues from all perspectives in the call-before-you-dig process. The second goal is for stakeholders to collaboratively develop education and outreach training based on the collected information and create an action plan to implement the training. The final goal is for stakeholders to establish the appropriate metrics to evaluate the success of the training.

Each workshop builds upon the information gathered from the prior workshops, so each

¹ [Gov. Code § 4216.12 \(b\)\(1\)](#)

² [Notice and agenda for the September 11, 2023 Annual Education and Outreach Meeting](#)

³ [Underground Safety Board 2024 Workplan](#)

⁴ [September 4, 2024, Annual Education and Outreach Meeting, Item 8: Framework for Coordinated State Education and Outreach](#)

workshop's focus is dependent upon the progress and results of the previous workshop(s).

Part of the Board's 2025 Workplan is to Establish a Framework for Coordinated State Education and Outreach. To meet the goals of the workshops, the E&O Committee is facilitating opportunities for excavators and operators to come together, share insights, and foster long-term collaboration.

2025 WORKSHOP OUTCOMES AND KEY FINDINGS

This report summarizes information received from excavators, operators, and other stakeholders who participated in the January 16, 2025⁵ and February 27, 2025⁶ Coordinated Statewide Education and Outreach workshops. Each workshop was two-and-a-half-hours long and engaged with stakeholders to identify root causes of excavation damage and discuss solutions to improve excavation safety training.

Coordinated Statewide Education and Outreach Workshop – January 16, 2025

The first Coordinated Statewide Education and Outreach Workshop presented for discussion several safety concerns related to underground infrastructure excavation. These included the failure to notify 811 before digging, improper excavation practices, issues stemming from inaccurate utility markings due to locator errors, excavators not maintaining proper clearance from utilities, failing to verify marks before digging, and mishandling abandoned lines. The methodology used to categorize these concerns combined both national data from the Common Ground Alliance (CGA) Damage Information Reporting Tool (DIRT) Report⁷ and insights from stakeholders, such as contractors, locators, and utility operators. The workshop discussions emphasized the need to tailor training efforts for different types of excavators—such as professionals versus homeowners or landscapers—and to help address specific regional challenges, such as locator shortages in California and access issues on private property. The workshop helped provide a better understanding of the underlying safety concerns from the perspective of excavators and operators.

Outreach Summary

Staff utilized emails and social media to raise awareness for the event:

- 23 emails were sent to stakeholders, including excavators and operators
 - That outreach resulted in 5 confirmed attendees

The workshop was also promoted through partners:

- Provided an update and promoted the workshop at the CARCGA General Meeting in December 2024
- USANorth sent information about the workshop to their subscribers in January 2025

Teams Webinar Registration Summary

Registration for the workshop was not required but was available as an option through the Teams Webinar registration form. Those that registered for the workshop immediately

⁵ [Notice and Agenda for the January 16, 2025 Coordinated Statewide Education and Outreach Workshop](#)

⁶ [Notice and Agenda for the February 27, 2025 2025 Coordinated Statewide Education and Outreach Workshop](#)

⁷ [DIRT Annual Report for 2023](#). Released October 2024

received a confirmation email and received a reminder email one hour before the start time of the workshop.

There was a total of 53 people that opted to register for the workshop:

- 26 of those who registered were confirmed to have attended the workshop virtually

While the source for registrations was not collected, analyzing the registration dates and times shows that some registration was driven by Board and partner outreach efforts as follows:

- 21 people registered following the Notice and Agenda email
- 10 people registered following the USANorth email
- 3 people registered after posts were published to the Energy Safety social media accounts
- 2 people registered following the CARCGA General Meeting

In-Person and Virtual Workshop Attendance and Engagement Summary

There was a total of 66 attendees at the workshop.

- 6 in-person attendees:
 - Every in-person attendee participated by providing comments or responding to comments
- 60 virtual attendees⁸:
 - At least one virtual attendee participated in each topic of discussion
 - Most virtual attendees stayed for 90% - 100% of the workshop

Representatives from call notification centers, utility providers, construction firms, government agencies, and municipalities across California attended.

Including both in-person and virtual attendees, the Public Works / Utility Owners and Utility Operators stakeholder category had the largest representation; Professional Excavators had half the representation of Public Works / Utility Owners and Utility Operators.

Stakeholder Category	Number of Attendees (includes both in-person and virtual)	Percent of Attendees
Utility Owner/Utility Operator	24	40%
Other	19	32%
Excavator	11	18%
Locator	5	8%
Engineer/Utility Design	3	5%
811 Notification Center	2	3%
Local Government	1	2%
Professional Association	1	2%

Workshop Discussion Items

⁸ Virtual attendees: This value shows the number of unique logins, meaning the count reflects individual devices used to access the webinar. Some participants may have viewed the webinar as a group from a single computer or phone.

Common Causes of Underground Infrastructure Safety

The E&O Committee first asked about common causes of underground infrastructure safety. The six most common causes of underground infrastructure damage at the national level, as reported in the 2023 DIRT Report, were presented to workshop attendees. Those causes include:

- Failure to notify 811
- Excavator failed to maintain clearance
- Facility not marked due to locator error
- Improper excavation practice not listed elsewhere
- Marked inaccurately due to locator error
- Excavator dug prior to verifying marks by potholing

The Committee asked attendees:

- Are these the top damages reflected in excavation projects within California or are there other types of causes that need to be included?

This discussion highlighted that addressing underground infrastructure damage in California requires a multifaceted approach, focusing on better communication, enhanced training, and targeted outreach. Workshop participants generally agreed that the root causes of damage outlined in the national data presented in the 2023 DIRT Report also reflected the root causes of damage in California. Participants discussed the importance of excavation practices that adhere to safety protocols, especially in verifying marks before excavation. Additionally, participants highlighted what they believe to be challenges faced more specifically in California, including a shortage of skilled locators, high turnover rates, a multigenerational and multilingual work force, and the difficulty of accessing private property for emergency work. There was a strong consensus among workshop attendees that distinguishing between different types of contractors—such as professional excavators versus homeowners or landscapers—could improve the effectiveness of training efforts and improve compliance with the 811 process. Abandoned utility lines and communication breakdowns between excavators and locators were also identified as challenges for excavation safety. Participants discussed how to overcome these challenges, including strategies combining improved education, consistent outreach, and better collaboration among all stakeholders.

Effectiveness of Current Excavation Safety Training

The E&O Committee asked about effectiveness of current excavation safety training by asking these questions:

- What approaches or methods are being used to delivery or receive excavation safety training?
- Which approaches or methods have been effective or ineffective to deliver or receive excavation safety training?
- What are possible reasons why the training is effective or ineffective?

The workshop participants discussed how training methods and addressing workforce challenges could improve excavation safety. Participants discussed safety training approaches that emphasized hands-on learning, with a general agreement that excavation workers benefit from practical, real-world experiences to understand excavation risks. Web-based training and

presentations were also discussed and, while it is agreed that there are benefits to these approaches, there were concerns around their effectiveness when accessed in isolation. Training and events incorporating interactive, hands-on learning were identified as particularly impactful in developing long-lasting safety practices. Several challenges were identified, including cost and time constraints faced by smaller contractors and high employee turnover, which reduce the effectiveness of safety training. Additionally, participants noted that the multilingual and generational diversity of the workforce means that training materials and approaches need to be varied and consider how to provide access across groups. Participants recommended integrating hands-on learning and focusing on developing partnerships with unions and other trade programs to increase safety training awareness and reach.

Access to Excavation Safety Training

The E&O Committee asked about access to excavation safety training by asking these questions:

- Are there specific challenges or obstacles you face in obtaining access to excavation safety training?
- What are the possible reasons for these challenges or obstacles?

Participants discussed challenges accessing excavation safety training, particularly for small contractors and homeowners. It was noted that while larger companies generally provide sufficient training to their staff, smaller contractors often face a lack of resources to conduct training, do not have access to or do not know how to access relevant training materials, and are not familiar with or likely to use more modern training methods, such as webinars. Participants highlighted that the highest level of technology people in the field carry is a cell phone. Participants also discussed how this gap in training extends to homeowners who may not be aware that they should call 811 before digging. The discussion also included participants sharing their experiences with legal and liability issues that undermine safety efforts, explaining that contractors sometimes shift liability onto homeowners which makes it difficult to hold the contractor accountable for damages. Participants expressed the need for increased educational outreach for smaller contractors and homeowners in various formats such as in-person training, video-based resources, and integration into local permit processes.

Coordination of Best Practice Between Stakeholders

The E&O Committee asked about coordination of best practice between stakeholders by asking these questions:

- What additional resources or tools would enhance the effectiveness of implementing best practices in excavation safety training?
- How can those best practices be consistently coordinated between stakeholders?

One participant discussed the need for financial incentives to motivate contractor participation in safety training, such as leveraging insurance companies to offer reduced premiums for training completion. Another participant pointed out that some financial incentives are already embedded in the system, such as bonding requirements for public works contractors, but recognized that further creativity in this area could encourage broader participation. Additionally, participants highlighted the value of utilizing existing resources like

the Common Ground Alliance (CGA) Best Practices Guide⁹ and USANorth 811 Excavation Handbook¹⁰; while the Board is not reviewing or endorsing the USANorth 811 Excavation Handbook, it was mentioned that these materials would be most effective if widely distributed and presented in a format that is preferred by the workforce, like field guides. Another discussion point was the need for better coordination among various stakeholders. It was discussed that stakeholders could increase their collaboration by utilizing existing platforms, such as social media and YouTube. The idea of hosting annual stakeholder events was proposed to encourage ongoing collaboration and coordination of training efforts. Participants noted that these events should consider multiple approaches, such as industry roundtables and events at a county or regional level, which would allow local stakeholders to discuss unique issues they might be facing. Participants also discussed how training could be adapted with consideration to the real-world needs of field workers, such as simplifying complex manuals and using case studies to make training more relatable. They noted that this could increase the engagement and effectiveness of training efforts.

Areas for Improvement in Excavation Safety Training

The E&O Committee asked about areas for improvement in excavation safety training by asking these questions:

- What recent incidents or near-misses have highlighted areas for improvement in excavation safety training, and what can we learn from them?

The discussion among participants highlighted that improving communication, updating utility maps, and reinforcing training and safety protocols are essential to reducing accidents and enhancing the safety of excavation projects. One challenge discussed was abandoned or unclaimed lines, and the safety risks created when contractors cannot easily determine if they are active or inactive. Participants engaged in a discussion about how better communication between utility companies and contractors could help address outdated or incomplete utility maps. Participants also identified the importance of addressing critical infrastructure like natural gas lines, focusing on agricultural areas. Participants also suggested better curriculum integration into schools and public awareness campaigns. An excavator and an operator discussed how multiple 811 tickets on the same projects impact locators in the field and how better coordination within the ticketing system to identify primary and secondary contractors could help reduce the EPR obligations when multiple contractors are working in the same area. The need for more regulation and legislation, particularly to ensure utilities mark their facilities appropriately, was also discussed as a necessary step to mitigate excavation safety risks.

Coordinated Statewide Education and Outreach Workshop – February 27, 2025

The second 2025 Coordinated Statewide Education and Outreach Workshop focused on how stakeholders could collaborate to provide solutions to the main safety training issues presented at the first workshop. Workshop attendees identified a concern to focus on and discussed solutions, priorities, resources, and communication strategies that could help address that excavation safety training concern. The workshop discussions emphasized that stakeholders are looking for content to be created by the Board that can be distributed and used for training by operators and excavators. Participants also provided perspectives and

⁹ [The Definitive Guide for Underground Safety & Damage Prevention](#), Best Practices 21.0, Common Ground Alliance

¹⁰ [USAN 811 Excavation Handbook, California](#), 2025

ideas on how the Board could better partner with other regulatory, licensing, and, permitting agencies to expand awareness of safety practices and laws. This workshop helped provide a foundational structure that will be used for the next two workshops.

Outreach Summary

Staff utilized emails and social media to raise awareness for the event:

- Staff reached out to 14 associations to ask for their partnership in promoting the workshop, and invited association staff to attend, as well

The Workshop was also promoted through partners:

- Staff provided an update and promoted the workshop date at the USANorth and DigAlert Board of Directors meetings
- CARCGA sent information about the workshop to their subscribers in February 2025

Teams Webinar Registration Summary

Registration for the workshop was not required but was available as an option through the Teams Webinar registration form. Those that registered for the workshop immediately received a confirmation email and received a reminder email one hour before the start time of the workshop.

There was a total of 18 people that opted to register for the workshop:

- 15 of those who registered were confirmed to have attended the workshop virtually

While the source for all registrations was not collected, analyzing the registration dates and times shows that registration was driven by Board and partner outreach efforts as follows:

- 14 people registered following the GovDelivery Bulletin send
- 2 people registered after posts were published to the Energy Safety social media accounts

In-Person and Virtual Workshop Attendance and Engagement Summary

There was a total 30 attendees at the workshop:

- 4 in-person attendees:
 - Every in-person attendee participated by providing comments or responding to comments
- 26 virtual attendees¹¹:
 - At least one online attendee participated in each topic of discussion
 - Most online attendees stayed for 90% - 100% of the workshop

Representatives from call notification centers, utility providers, construction firms, professional associations, government agencies, and municipalities across California attended.

Including both in-person and virtual attendees, the Utility Owners/Utility Operators

¹¹ Virtual attendees: This value shows the number of unique logins, meaning the count reflects individual devices used to access the webinar. Some participants may have viewed the webinar as a group from a single computer or phone.

stakeholder category had the largest representation; Professional Excavators had less than half the representation of Utility Owners/Utility Operators.

Stakeholder Category	Number of Attendees	Percent of Attendees
	(includes both in-person and virtual)	
Utility Owner/Utility Operator	10	38%
Local Government	6	23%
Excavator	3	12%
Locator	3	12%
Engineer/Utility Design	2	8%
Professional Association	2	8%
Other	2	8%
811 Notification Center	2	8%

Workshop Discussion Items

Review of Coordinated Statewide Education and Outreach Workshop 1

Participants used an online tool to choose an area of focus from the top six most common causes of underground infrastructure damage, as reported in the Common Ground Alliance (CGA) 2023 Damage Information Reporting Tool (DIRT).

The poll engaged 28 participants who had joined the workshop in-person and virtually during the time that the poll was shared.

The poll results were:

- Failure to notify 811 - 17 votes (61%)
- Marked inaccurately due to locator error - 4 votes (14%)
- Excavator dug prior to verifying marks by potholing - 3 votes (11%)
- Facility not marked due to locator error - 2 votes (7%)
- Improper excavation practice not listed elsewhere - 2 votes (7%)
- Excavator failed to maintain clearance - 0 votes

The participants identified failure to notify 811 as the top safety concern to focus on for this discussion and the remaining discussions for the 2025 Coordinated Statewide Education and Outreach workshops.

Solutions to Address 'Failure to Notify 811' as Excavation Safety Training Concern

The E&O Committee asked about solutions to address failure to notify 811 as an excavation safety training concern by asking these questions:

- What specific solutions can be implemented?
- How can existing resources, technologies, or systems be better utilized?
- What innovative practices or emerging technologies could be applied?

One participant discussed confusion surrounding the permitting and ticketing processes, particularly the interpretation of the excavation permit requirements in Government Code

section 4216.9¹², which participants suggested some local agencies misunderstand. To address this, participants suggested raising awareness among permit inspectors on when and how to verify ticket issuance before pulling a work permit. Participants discussed how the timing for acquiring an excavation permit and submitting an 811 ticket can sometimes be misaligned. Participants noted that when calling to get a permit, perhaps three to four months prior to work beginning, they are asked for their 811 ticket number even though it may be too early to request a ticket. They also presented another scenario where they try to request an 811 ticket but are asked for their permit number. Participants proposed that a more structured process and better communication between permitting offices and regional notification centers would better align these requirements and avoid having steps completed out of order. The need for targeted training was also emphasized, especially regarding the importance of confirming utility responses before excavation, a step that participants mentioned many contractors overlook. While this is outside of the focus of the discussion – Solutions to Address ‘Failure to Notify 811’ as Excavation Safety Training Concern – it was suggested that training should include a section dedicated to this critical step. Technological tools, such as apps displaying excavation boundaries and utility conflicts, were noted as beneficial, although inefficiency in accessing utility contact information was identified as an issue. There was a proposal to work with safety certification bodies like the Board of Certified Safety Professionals (BCSP) to integrate excavation safety practices into their training programs.

Prioritizing Solutions to Address ‘Failure to Notify 811’ as Excavation Safety Training Concern

The E&O Committee asked about prioritizing solutions to address failure to notify 811 as excavation safety training concern by asking these questions:

- Which of these solutions would have the greatest impact, minimize incidents, and improve stakeholder communications?
- What criteria should guide the prioritization of these solutions?

The discussion highlighted the benefits of both online and in-person training formats, with a suggestion to create materials that allow for hybrid access to maximize reach and engagement. A key proposal was integrating 811 training into the licensing process for contractors, ensuring all licensed personnel are educated on safety procedures. Additionally, the idea of requiring municipalities to mandate 811 training for permit issuance was discussed. Participants also advocated for data-driven approaches, such as using surveys to assess training effectiveness and targeting high-risk contractor groups (which they identified as including fencing contractors) based on damage data.

Leveraging Resources to Address ‘Failure to Notify 811’ as Excavation Safety Training Concern

The E&O Committee asked about prioritizing solutions to address failure to notify 811 as an excavation safety training concern by asking these questions:

- Which of these solutions would have the greatest impact, minimize incidents, and improve stakeholder communications?
- What criteria should guide the prioritization of these solutions?

Participants identified challenges including financial constraints and resource limitations, especially for smaller contractors. Multilingual communication was highlighted as a significant

¹² [Gov. Code § 4216.9](#)

barrier, with the need for training materials to be available in Spanish to ensure widespread understanding and compliance. The discussion also included concerns about the perception that regulatory stakeholders can be hesitant to collaborate closely on other outreach and training efforts within the industry. Participants proposed a solution to build stronger partnerships between the Board and stakeholders by implementing a "train-the-trainer" model for cost-effective training delivery. Participants also expressed frustration over what they believed to be slow or delayed implementation of training programs by the Board. While some concerns about ensuring the quality standards of trainings using the "train-the-trainer" model were discussed, participants felt that these types of creative and collaborative approaches would work toward addressing the overall failure to notify 811 safety concern.

Enhancing Communication to Address 'Failure to Notify 811' as Excavation Safety Training Concern

The E&O Committee asked about prioritizing solutions to address failure to notify 811 as an excavation safety training concern by asking these questions:

- What are the most effective communication platforms or tools that can be used to communicate and coordinate implementation of solutions?

This discussion included a reference to PG&E's Gold Shovel Association, which certifies contractors for excavation safety, and how such initiatives can grow through collaboration, as demonstrated by the Damage Prevention Institute and Common Ground Alliance¹³. The importance of utilizing established networks, such as the Board, and video platforms like YouTube, was highlighted as an effective way to reach a broad audience, particularly given the widespread use of smartphones. Participants agreed that safety messaging should prioritize education over penalties, focusing on long-term safety practices and ensuring proper procedures are followed to prevent accidents. There was also a recognition by the Committee that while progress may appear slow, careful planning and continuous improvement efforts are essential for fostering collaboration and promoting safe excavation practices across the industry.

Coordinated Statewide Education and Outreach Workshops Summary

The Committee heard participants' concerns regarding excavation safety training, which resulted in these key findings:

- Workshop attendees selected the underground infrastructure damage root cause "Failure to Notify 811" as the focus of discussions for the 2025 Coordinated Statewide Education and Outreach workshops.
- Participants asked the Board to develop safety training materials related to "Failure to Notify 811".
- Participants stated that they would use and distribute those materials in their own outreach and safety training efforts to improve awareness of the 811 process.

The Committee will provide additional opportunities for stakeholders to collaborate on the development of safety training materials that address "Failure to Notify 811" as a key safety training challenge, to discuss how stakeholders will use and distribute the developed

¹³ Press Release, January 3, 2023: [Common Ground Alliance Acquires Gold Shovel Association, Welcomes New Participants to the Damage Prevention Institute](#)

materials, and to define how success of this collaborative approach will be measured.

UPCOMING WORKSHOPS

The Board's E&O Committee plans to continue this series of education and outreach workgroups focusing on "Failure to Notify 811" throughout 2025. Staff will hold these workshops in-person with the option of attending online. The next workshop will be held May 2, 2025.

FINAL FINDINGS

At the stakeholders' request, the Committee is facilitating opportunities for industry collaboration in the development of safety training outreach materials so that stakeholders can use and distribute them. Staff will present the outcomes of stakeholder collaboration, including stakeholder input and materials developed by stakeholders, at the Board's 2025 Education and Outreach meeting in September.